

# AKAI

# SERVICE MANUAL

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**Model:**       **CFT2716**

Safety Instructions  
Features & Specifications  
Block Diagram  
Circuit Diagram  
Disassembly  
Pin Descriptions  
Exploded View Diagram  
Spare Part List

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This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

## IMPORTANT SERVICE SAFETY INFORMATION

Operating the receiver outside of its cabinet or with its back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage RF terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis, escutcheon, picture tube tag and tuner when operating chassis.

These receivers have a "polarized" AC line cord. The AC plug is designed to fit into standard AC outlets in one direction only. The wide blade connects to the "ground side" and the narrow blade connects to the hot "side" of the AC line. This assures that the TV receiver is properly grounded to the house wiring. If an extension cord must be used, make sure it is of the "polarized" type.

Since the chassis of this receiver is connected to one side of the AC supply during operation, service should not be attempted by anyone not familiar with the precautions necessary when working on these types of equipment.

When it is necessary to make measurements or tests with AC power applied to the receiver chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damage to transistors. The Isolation Transformer should be connected between the TV line cord plug and the AC power outlet.

Certain High voltage (HV) may cause X-ray radiation. Receivers should not be operated with HV levels exceeding the specified rating for their chassis type. Higher voltage may also increase the possibility of failure in the HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the receiver that could cause a rise in high voltage, or operating supply voltages. No changes should be made to the original design of the receiver.

Components shown in the shaded areas on the schematic diagram and/or identified by in the replacement parts list should be replaced only with exact factory recommended replacement parts. The use of unauthorized substitute parts may create shock, fire, X-ray radiation, or other hazards.

To determine the presence of high voltage, use an accurate high impedance HV meter connected between the second anode lead and the CRT tag grounding device. When servicing the High Voltage System remove static charges from it by connecting a 10K Ohm resistor in series with an insulated wire (such as test probe) between the picture tube tag and 2<sup>nd</sup> anode lead (Have AC line cord disconnected from AC supply).

The picture tube used in this receiver employs integral implosion protection. Replace with a tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely. Keep others without shatter proof goggles away.

Before returning the receiver to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Replace all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers of shields, isolation resistor-capacitor networks, mechanical insulators etc.

3. To be sure that not shock hazard exists, a check for the presence of leakage current should be made at each exposed metal part having a return path to the chassis (antenna, cabinet metal, screw heads knobs and/or shafts, escutcheon, etc.) in the following manner.

Plug the AC line cord directly into a 120V, AC receptacle. (Do not use an Isolation Transformer during these checks.) All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a nonpolarized adapter plug must be used only for the purpose of completing these checks.)

If available, measure current using an accurate leakage current tester. Any reading of 0.35mA or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to owner.

If a reliable leakage current tester is not available, this alternate method of measurement should be used. Using two clip leads, connect a 1500 Ohm, 10 watt resistor paralleled by a 0.15uF capacitor in series with a known earth ground, such as a water pipe or conduit and the metal part to be checked. Use a VTVM or VOM with 1000 Ohms per Volt, or higher, sensitivity to measure this AC voltage drop across the resistor,. Any reading of 0.35 volt RMS or more is excessive and indicates potential shock hazard which must be corrected before returning he receiver to the owner.

## **ALIGNMENT PROCEDURES**

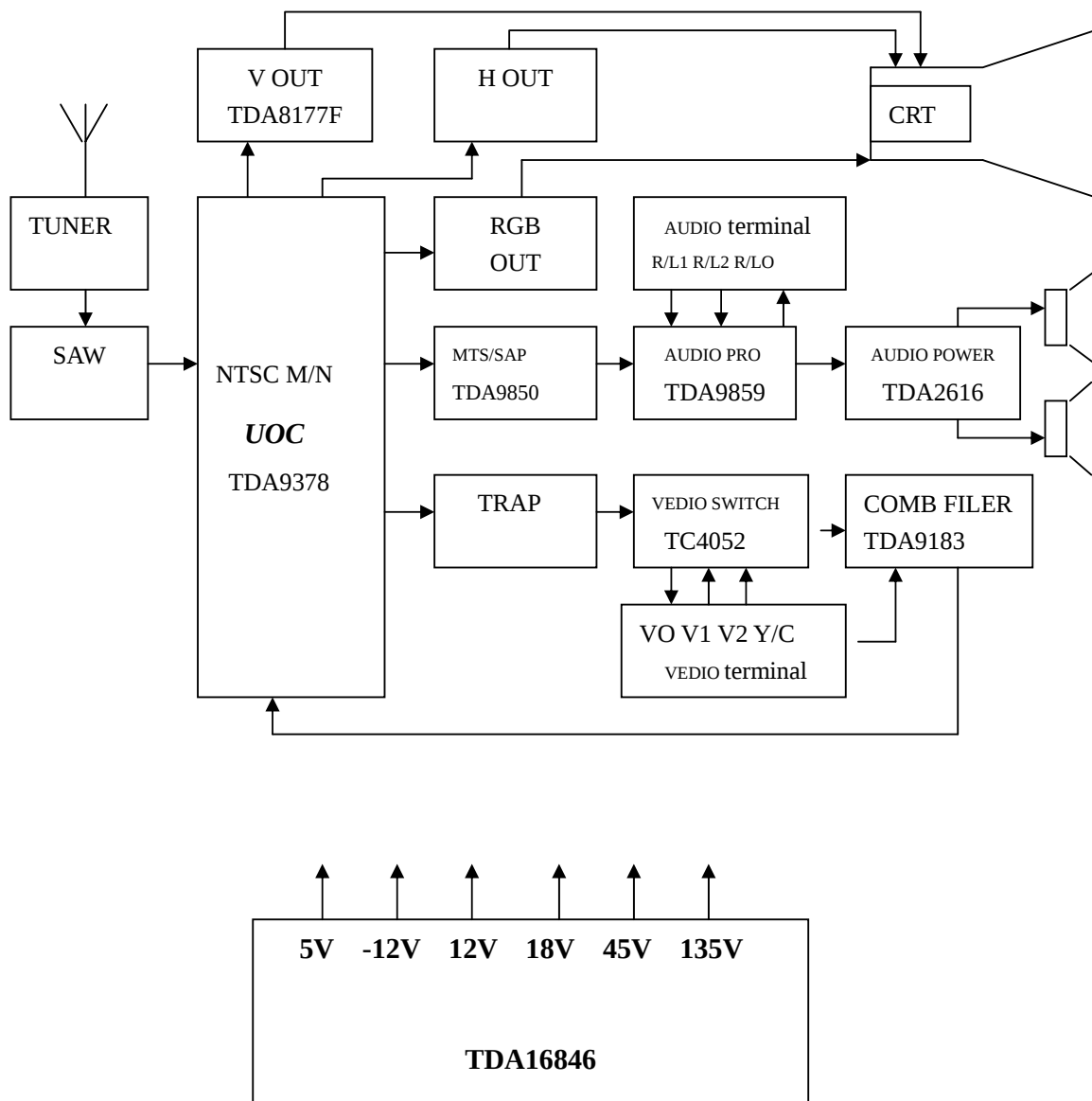
### **PLEASE READ BEFORE ATTEMPTING SERVICE**

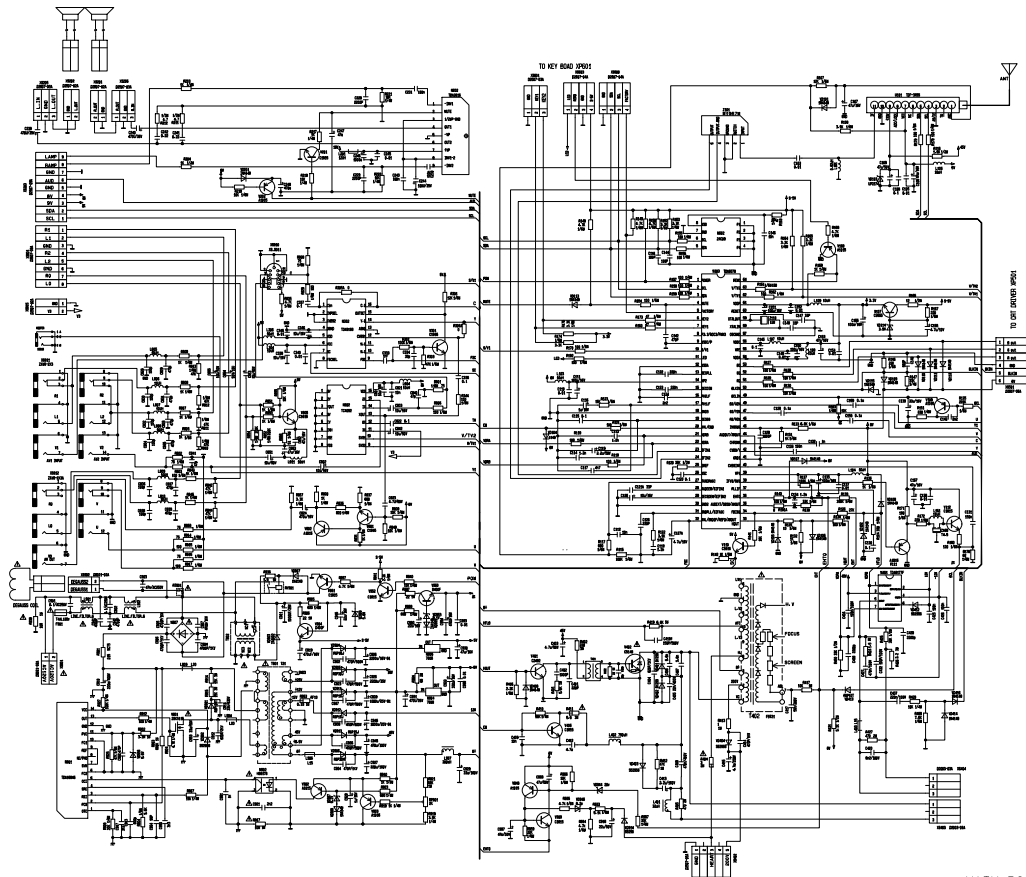
1. Use an Isolation Transformer when performing any service on this chassis.
2. Never disconnect any leads while receiver is in operation.
3. Disconnect all power before attempting an repairs.
4. Do not short any porsition of the circuit while the power is on.
5. For safety reasons, replacing any components should be according with identical replacement parts (SEE PARTS LIST).
6. Before testing, warm up the TV for at least 30 minutes and demagnetize the CRT with an external degaussing coil.
7. When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
8. Inferior silicon grease can damage IC's and transistors. When replacing IC's and transistors, use only specified silicon grease,. Remove all old silicon when applying new silicon.
9. Before removing the anode cap, discharge eiecticity because it contains high voltage.

## FUNCTION AND SPECIFICATION

| TUBE/POWER SUPPLY                                        |               |
|----------------------------------------------------------|---------------|
| TUBE TYPE                                                | PF            |
| SIZE                                                     | 27"           |
| ASPECT RATIO                                             | 4 : 3         |
| POWER SUPPLY                                             | ~120V, 60Hz   |
| MAIN POWER SWITCH                                        | SOFT SWITCH   |
| TUNER                                                    |               |
| BUILT-IN FS TUNER                                        | YES           |
| # OF CHANNEL/PROGRAM                                     | 181 CH        |
| COLOR SYSTEM                                             | NTSC          |
| SOUND SYSTEM                                             | M             |
| AV NTSC 3.58/4.43                                        | AV NTSC 3.58  |
| PICTURE                                                  |               |
| COMB FILTER                                              | 2LINE         |
| TINT, COLOR, BRIGHTNESS, CONTRAST AND SHARPNESS CONTROL  | YES           |
| USER SELECTABLE PICTURE CONTROL(NORMAL,BRIGHT,USER,SOFT) | YES           |
| USER SELECTABLE 3-STAGE COLOR TEMPERATURE CONTROLS       | YES           |
| OSD LANGUAGE                                             | ENG, FR, SPA  |
| SOUND                                                    |               |
| STEREO/MONO                                              | MTS/SAP       |
| AV STEREO                                                | YES           |
| SURROUND                                                 | YES           |
| tone control(BASS/TREBLE/BALANCE)                        | YES           |
| USER SELECTABLE SOUND CONTROL                            | YES           |
| SPEAKER QUANTITY                                         | 2             |
| AUDIO OUTPUT POWER                                       | 3W×2          |
| USER CONVENIENCE                                         |               |
| FULL FUNCTION REMOTE CONTROL                             | YES           |
| CCD                                                      | YES           |
| V-CHIP                                                   | YES           |
| CHILD LOCK                                               | YES           |
| SLEEP TIMER                                              | YES           |
| RECALL                                                   | YES           |
| QUICK VIEW                                               | YES           |
| CONNECTORS                                               |               |
| CABLE/ANTENNA INPUT                                      | 1 REAR        |
| AV INPUT                                                 | 2 REAR,1SIDE  |
| S-VIDEO INPUT                                            | 1 REAR        |
| COMPONENT VIDEO INPUT (YCbCr)                            | 1 REAR        |
| AV OUTPUT                                                | 1 REAR(Audio) |
| HEADPHONE OUTPUT                                         | NO            |

Block diagram

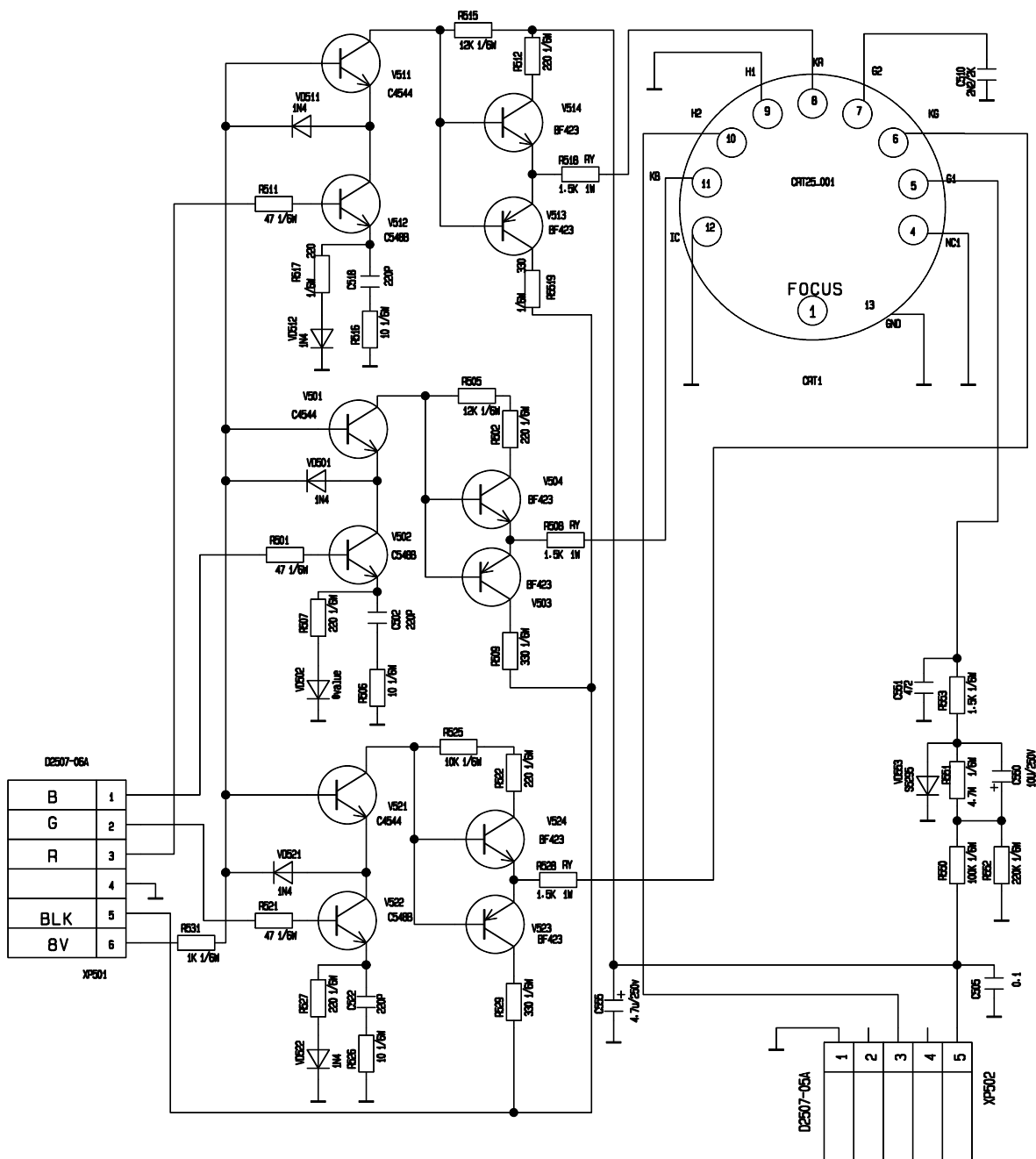




MAIN BOARD

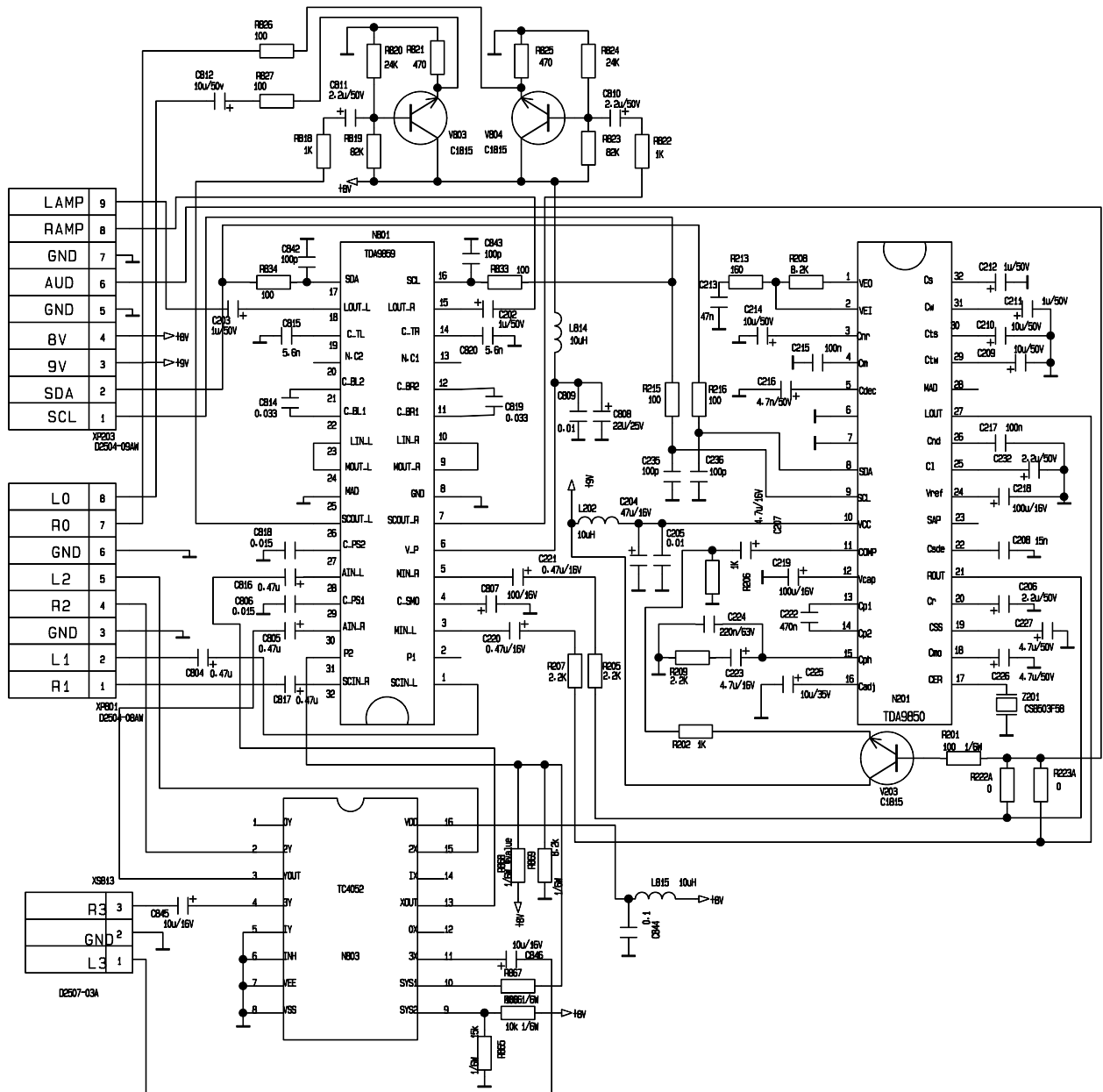
NOTE:

- (1) ALL CAPACITORS ARE IN  $\mu F$  UNLESS OTHERWISE NOTED.
- (2) ALL CAPACITORS ARE 50V UNLESS OTHERWISE NOTED.
- (3) CAPACITORS NOT SPECIFICALLY DESIGNATED ARE CERAMIC CAPACITORS.
- (4) ALL RESISTORS ARE IN OHM 1/8 WATT UNLESS OTHERWISE NOTED.
- (5) RESISTORS NOT SPECIFICALLY DESIGNATED ARE CARBON FILM RESISTORS.
- (6) THIS CIRCUIT DIAGRAM IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.
- (7)  $\Delta$  DESIGNATES A SAFETY CRITICAL COMPONENT.



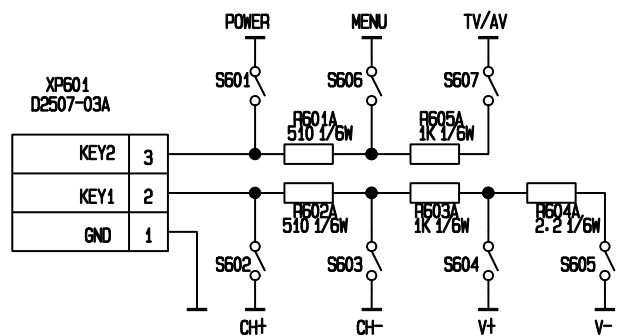
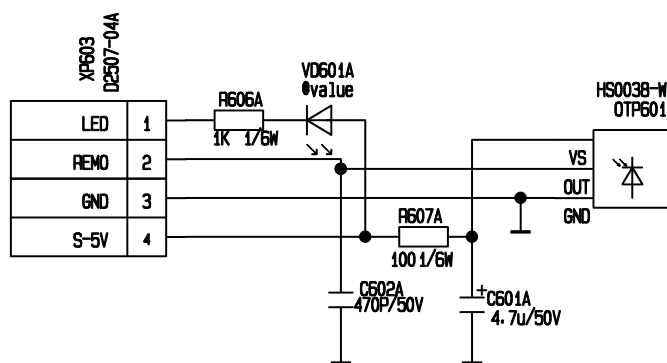
CRT DRIVER

CONNECT TO MAIN BOARD

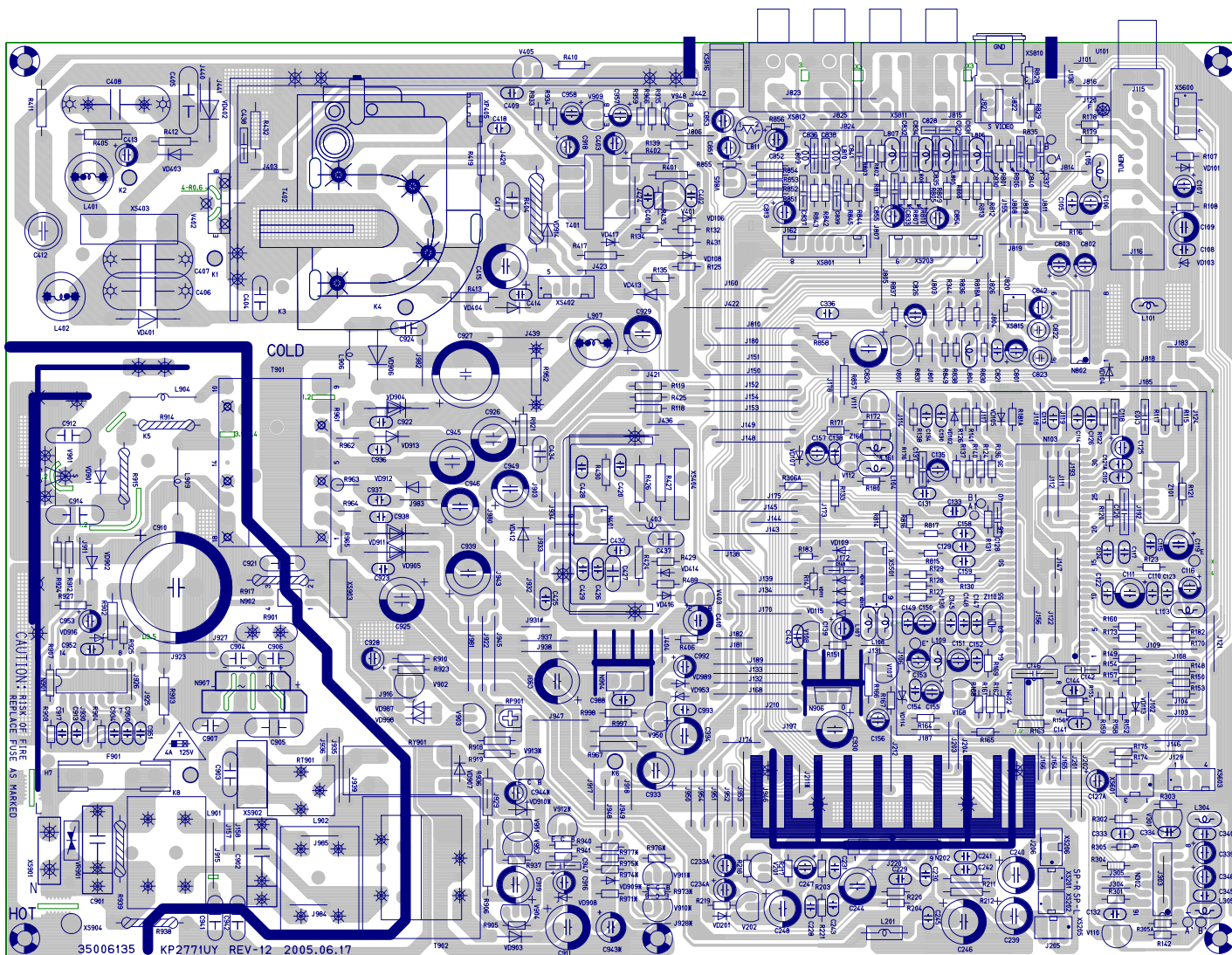


SOUND PROCESS





## CONTROL BOARD

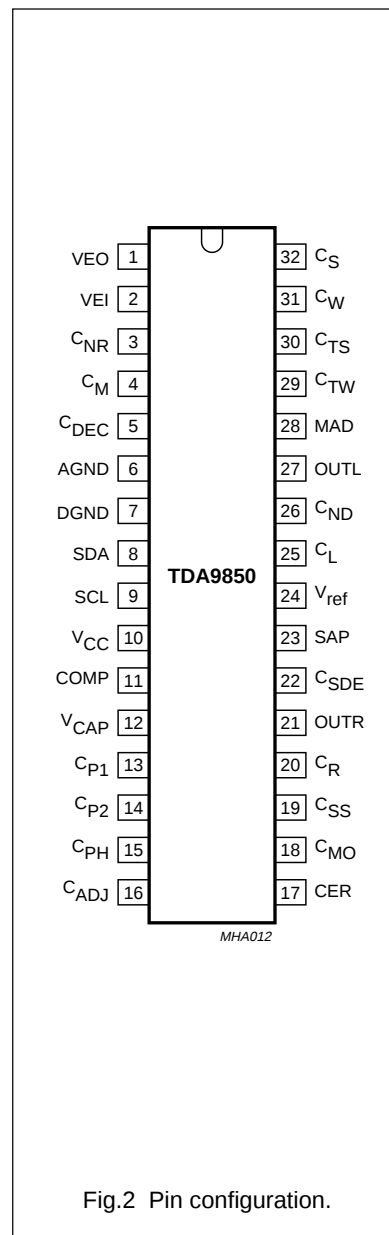


I<sup>2</sup>C-bus controlled BTSC stereo/SAP decoder

## TDA9850

## PINNING

| SYMBOL           | PIN | DESCRIPTION                                             |
|------------------|-----|---------------------------------------------------------|
| VEO              | 1   | variable emphasis output for dbx                        |
| VEI              | 2   | variable emphasis input for dbx                         |
| C <sub>NR</sub>  | 3   | capacitor noise reduction for dbx                       |
| C <sub>M</sub>   | 4   | capacitor mute for SAP                                  |
| C <sub>DEC</sub> | 5   | capacitor DC-decoupling for SAP                         |
| AGND             | 6   | analog ground                                           |
| DGND             | 7   | digital ground                                          |
| SDA              | 8   | serial data input/output                                |
| SCL              | 9   | serial clock input                                      |
| V <sub>CC</sub>  | 10  | supply voltage (+9 V)                                   |
| COMP             | 11  | composite input signal                                  |
| V <sub>CAP</sub> | 12  | capacitor for electronic filtering of supply            |
| C <sub>P1</sub>  | 13  | capacitor for pilot detector                            |
| C <sub>P2</sub>  | 14  | capacitor for pilot detector                            |
| C <sub>PH</sub>  | 15  | capacitor for phase detector                            |
| C <sub>ADJ</sub> | 16  | capacitor for filter adjustment                         |
| CER              | 17  | ceramic resonator                                       |
| C <sub>MO</sub>  | 18  | capacitor DC-decoupling mono                            |
| C <sub>SS</sub>  | 19  | capacitor DC-decoupling stereo/SAP                      |
| C <sub>R</sub>   | 20  | adjustment capacitor, right channel                     |
| OUTR             | 21  | output, right channel                                   |
| C <sub>SDE</sub> | 22  | capacitor SAP de-emphasis                               |
| SAP              | 23  | SAP output                                              |
| V <sub>ref</sub> | 24  | reference voltage $0.5 \times (V_{CC} - 1.5 \text{ V})$ |
| C <sub>L</sub>   | 25  | adjustment capacitor, left channel                      |
| C <sub>ND</sub>  | 26  | noise detector capacitor                                |
| OUTL             | 27  | output, left channel                                    |
| MAD              | 28  | programmable address bit                                |
| C <sub>TW</sub>  | 29  | capacitor timing wideband for dbx                       |
| C <sub>TS</sub>  | 30  | capacitor timing spectral for dbx                       |
| C <sub>W</sub>   | 31  | capacitor wideband for dbx                              |
| C <sub>S</sub>   | 32  | capacitor spectral for dbx                              |



## PINNING

| SYMBOL                | PIN | DESCRIPTION                      |
|-----------------------|-----|----------------------------------|
| C <sub>IN</sub>       | 1   | chrominance signal input         |
| INPSEL                | 2   | input switch select input        |
| Y/CVBS <sub>2</sub>   | 3   | luminance or CVBS signal 2 input |
| DGND                  | 4   | digital ground                   |
| V <sub>DDD</sub>      | 5   | digital supply voltage           |
| V <sub>CCA</sub>      | 6   | analog supply voltage            |
| SC                    | 7   | sandcastle signal input          |
| FSCSEL                | 8   | colour subcarrier select input   |
| FSC                   | 9   | colour subcarrier signal input   |
| n.c.                  | 10  | not connected                    |
| n.c.                  | 11  | not connected                    |
| Y/CVBS <sub>1</sub>   | 12  | luminance or CVBS signal 1 input |
| AGND                  | 13  | analog ground (signal reference) |
| Y/CVBS <sub>OUT</sub> | 14  | luminance or CVBS signal output  |
| OUTSEL                | 15  | output switch select input       |
| C <sub>OUT</sub>      | 16  | chrominance signal output        |

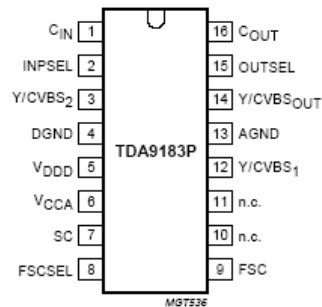


Fig.2 Pin configuration (DIP16).

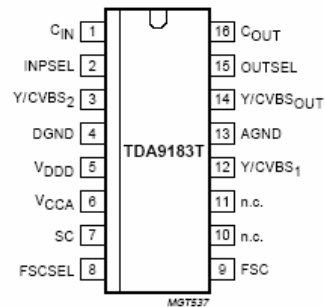


Fig.3 Pin configuration (SO16).

## PINNING

| SYMBOL             | PIN | DESCRIPTION                                    |
|--------------------|-----|------------------------------------------------|
| SCIN <sub>L</sub>  | 1   | SCART input; left channel                      |
| P1                 | 2   | port 1 output                                  |
| MIN <sub>L</sub>   | 3   | MAIN input; left channel                       |
| C <sub>SMO</sub>   | 4   | smoothing capacitor of reference voltage       |
| MIN <sub>R</sub>   | 5   | MAIN input; right channel                      |
| V <sub>P</sub>     | 6   | supply voltage                                 |
| SCOUT <sub>R</sub> | 7   | SCART output; right channel                    |
| GND                | 8   | ground                                         |
| MOUT <sub>R</sub>  | 9   | MAIN output; right channel                     |
| LIN <sub>R</sub>   | 10  | input to right loudspeaker channel             |
| C <sub>BR1</sub>   | 11  | bass capacitor connection 1; right channel     |
| C <sub>BR2</sub>   | 12  | bass capacitor connection 2; right channel     |
| n.c.               | 13  | not connected                                  |
| C <sub>TR</sub>    | 14  | treble capacitor connection; right channel     |
| LOUT <sub>R</sub>  | 15  | loudspeaker output; right channel              |
| SCL                | 16  | serial clock input; I <sup>2</sup> C-bus       |
| SDA                | 17  | serial data input/output; I <sup>2</sup> C-bus |
| LOUT <sub>L</sub>  | 18  | loudspeaker output; left channel               |
| C <sub>TL</sub>    | 19  | treble capacitor connection; left channel      |
| n.c.               | 20  | not connected                                  |
| C <sub>BL2</sub>   | 21  | bass capacitor connection 2; left channel      |
| C <sub>BL1</sub>   | 22  | bass capacitor connection 1; left channel      |
| LIN <sub>L</sub>   | 23  | input to left loudspeaker channel              |
| MOUT <sub>L</sub>  | 24  | MAIN output; left channel                      |
| MAD                | 25  | module address select input                    |
| SCOUT <sub>L</sub> | 26  | SCART output; left channel                     |
| C <sub>PS2</sub>   | 27  | pseudo stereo capacitor 2                      |
| AIN <sub>L</sub>   | 28  | AUX input; left channel                        |
| C <sub>PS1</sub>   | 29  | pseudo stereo capacitor 1                      |
| AIN <sub>R</sub>   | 30  | AUX input; right channel                       |
| P2                 | 31  | port 2 output                                  |
| SCIN <sub>R</sub>  | 32  | SCART input signal RIGHT                       |

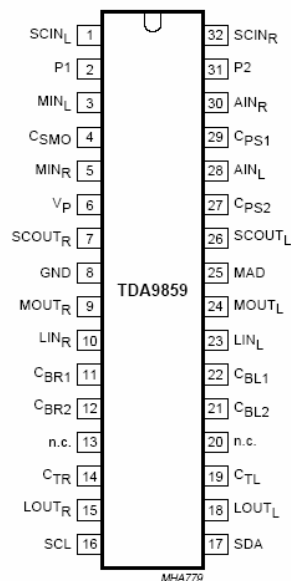
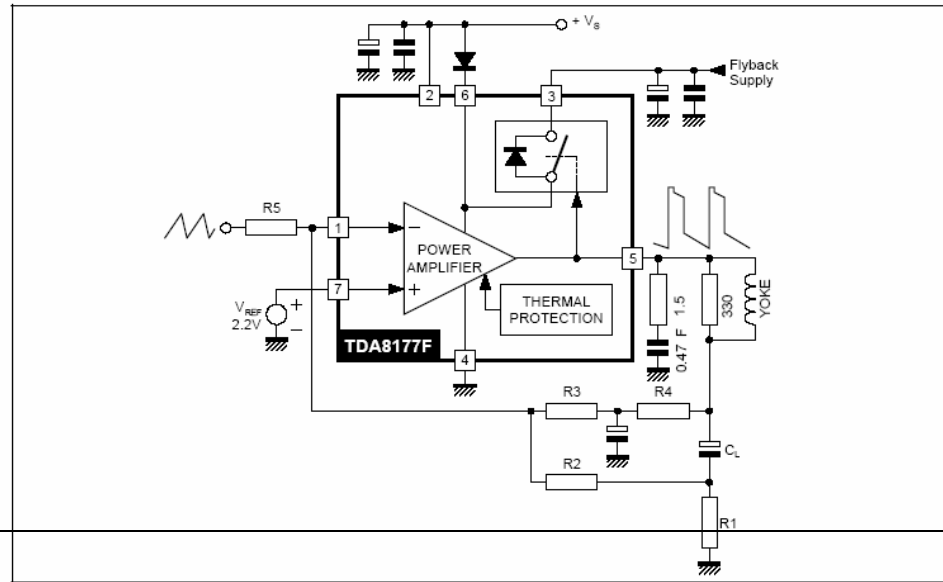


Fig.2 Pin configuration.

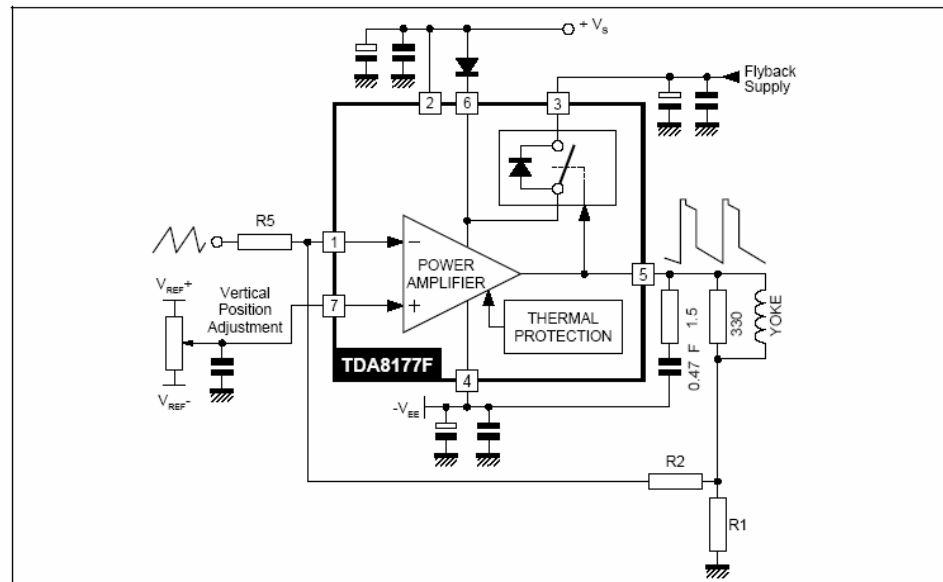
# APPLICATION CIRCUITS

## AC COUPLING



8177F-03 EPS

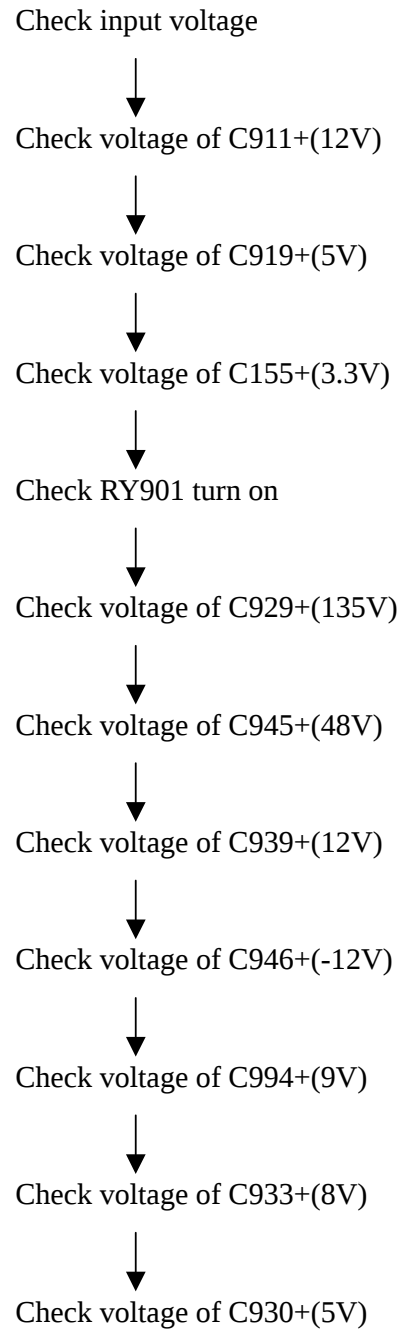
## DC COUPLING



8177F-04 EPS

## Service Flow Chart

### Power supply



## CPU circuit

Check voltage of N103 pin54,pin56,pin61(3.3V)



Check waveform of N103 pin58,pin59



Check waveform of N103 pin2,pin3



Check voltage of N602 pin8 (5V)



Check waveform of N602 pin5,pin6

## Vertical circuit

Check voltage of N103 pin14,pin39(8V)



Check waveform of N103 pin26



Check waveform of N103 pin21,pin22



Check voltage of N401 pin3(48V)



Check voltage of N401 pin2(12V)



Check voltage of N401 pin4(-12V)



Check waveform of N401 pin1,pin7



Check waveform of N401 pin5



## Horizontal circuit

Check voltage of N103 pin14,pin39(8V)



Check waveform of N103 pin33



Check voltage of C945+(48V)



Check waveform of V401-B



Check waveform of V401-C



Check voltage of C929+(135V)



Check waveform of V402-B

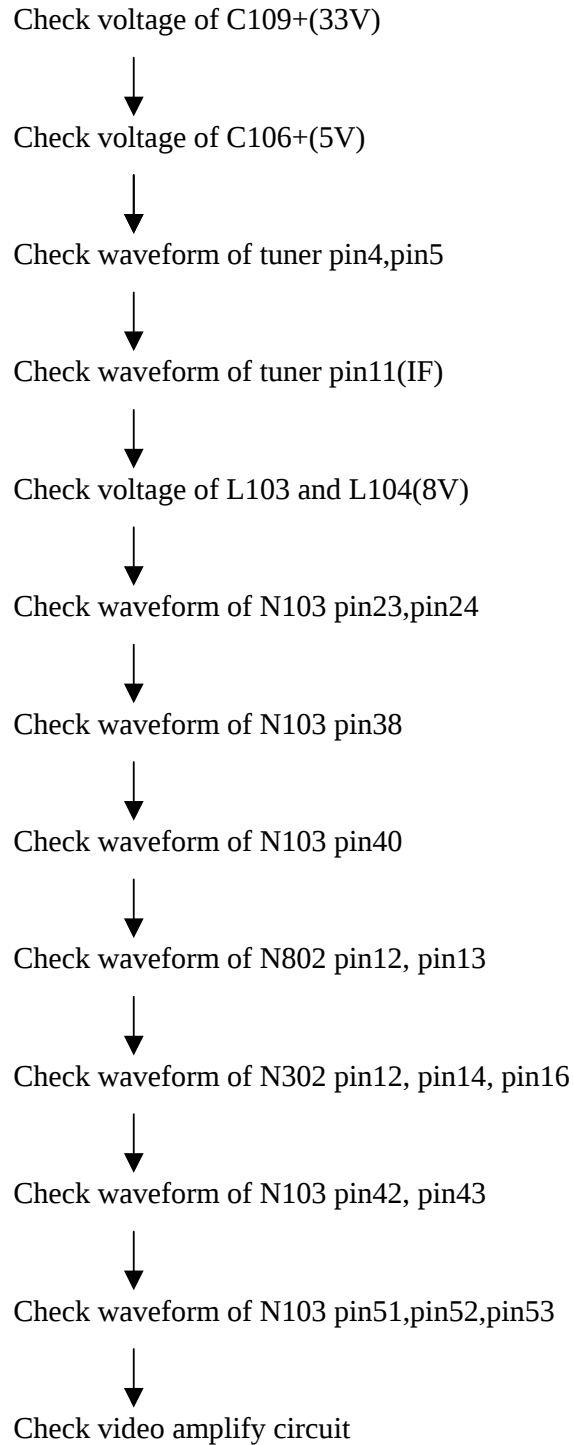


Check waveform of V402-C

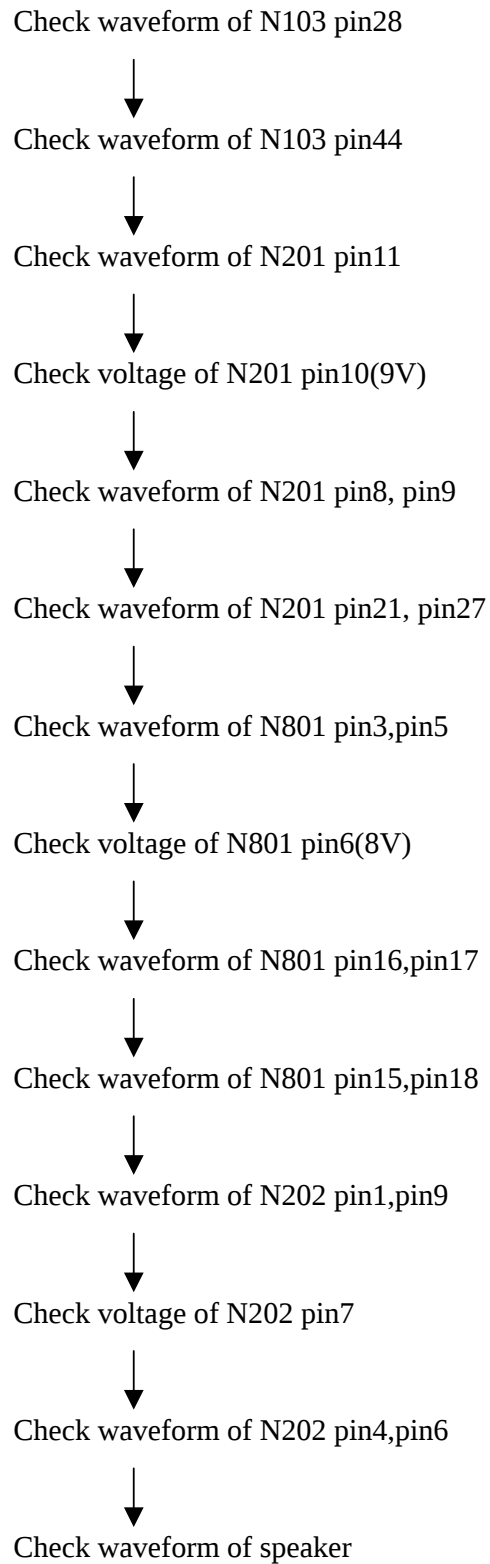


Check voltage of C415+(200V)

## Video circuit



## Audio circuit



## TEST EQUIPMENT

1. Standard Signal Generator (PT5820)
2. Oscilloscope
3. Digital Voltmeter
4. High Voltage Meter(40KV)
5. Demagnetizing Coil

**Tip:** some adjustments must be performed in the SERVICE menu. You can enter the SERVICE menu in the following way:

1. Press the MENU button on the remote control then press the INFO button on the remote control at least 5 times immediately.
2. Press the CH+/- buttons to select the desired mode or press 0-9 number buttons to enter the SERVICE "X" menu directly and then press the CH+/- buttons to select the desired mode.
3. Press the VOL+/- buttons to change the settings.

### IF ADJUSTMENT

1. Enter the SERVICE menu and press the number button "4" on the remote control to bring up SERVICE 4.
2. Set the IFFS to "1".

### B+ ADJUSTMENT

TEST EQUIPMENT: DIGITAL METER

1. Operate the TV set with AC 120V.
2. Connect the digital voltmeter + lead to C929 and GND. Adjust the RP901 until the meter reading  $DC135 \pm 0.5V$ .

### GEOMETRY ADJUSTMENT

1. Receive a geometry pattern.
2. Enter the SERVICE menu (SERVICE 1 for horizontal and SERVICE 2 for vertical).
3. Select a value between 0 and 63, and the changed value is stored immediately.

Horizontal:

6PAR: Horizontal Parallelogram

Set the horizontal parallelogram to change to rectangle or trapezium.

6BOW: Horizontal Bow

Set the vertical lines straight.

6HSH: Horizontal Delay (horizontal shift)

Set the horizontal centre of the picture at the centre of the tube.

6EWW: Horizontal Width

Set the correct picture width.

6EWP: East-west parabola correction

Set the vertical lines at the sides of the screen straight.

6UCR: East-west corner-correction

Set the vertical lines in the upper corners straight.

6LCR: East-west corner-correction

Set the vertical lines in the lower corners straight.

6EWT: Trapezium correction

Set the vertical lines as vertical as possible.

Vertical:

6VSL: Vertical S-correction

Set the vertical lines as vertical as possible.

6VAM: Vertical Amplitude (picture height)

Set the correct picture height.

6SCL: Vertical Linearity

Set the height of the squares in the top and bottom of the picture so that they are equal of the height.

6VSH: Vertical Shift

Set the vertical centre of the picture at the centre of the tube.

### **WHITE BALANCE ADJUSTMENT**

1. Enter the TV menu and set the color mode to "NORMAL".
2. Receive a black-white pattern with color sync signal.
3. Adjust the CONTRAST and BRIGHTNESS in such a way that the brightness value of the black area is 5 nit and the white is 80 nit.
4. Enter the SERVICE 3 menu and adjust RED, GRN, WPR, WPG and WPB in such a way that X and Y have the following values:  
X=0.248, Y=0.299

### **FOCUS ADJUSTMENT**

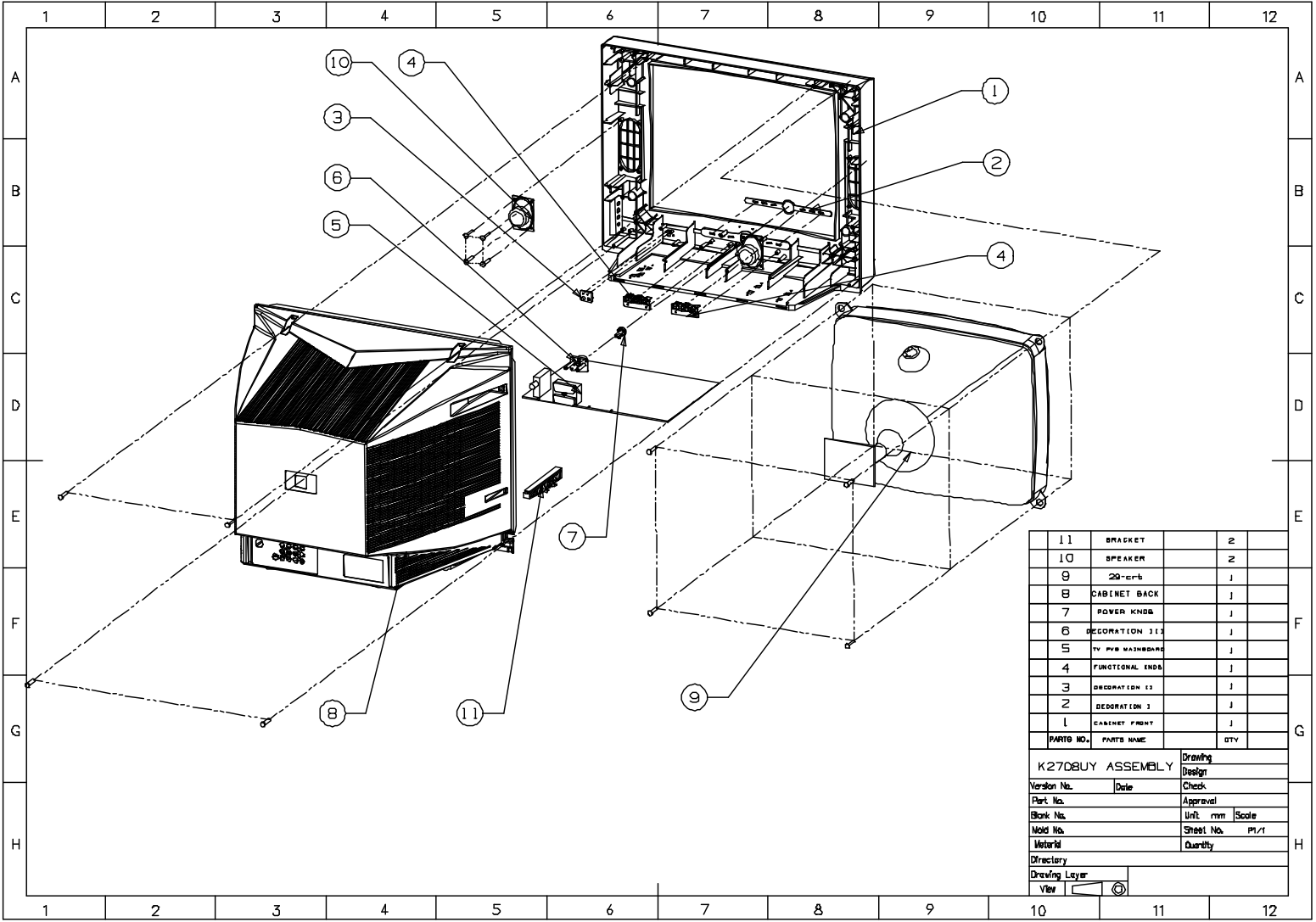
1. Set CONTRAST control to maximum position and BRIGHTNESS control to middle position.
2. Adjust FOCUS control (on the FBT) to obtain the sharpest and clearest picture on the CRT.

### **RF AGC**

1. Receive the signal of channel 13 (VHF HIGH).
2. Set the input field strength to 60 dB  $\mu$  V.
3. Adjust RF AGC (TOP, in SERVICE 4) control to the point where noise is the least.

## **OSD ADJUSTMENT**

- 1.Receive the TV Signal with caption text.
- 2.Enter the SERVICE 2 menu..
- 3.Select a correct value for the items below.
  - 6VOF: Vertical OSD position alignment
  - 6CCV: Vertical OSD of CCD position alignment
  - HOF: Horizontal OSD position alignment
  - CCHF: Horizontal OSD of CCD position alignment
  - VX: Vertical Zoom (select 25)



|           |                  |     |  |
|-----------|------------------|-----|--|
| 11        | BRACKET          | 2   |  |
| 10        | SPEAKER          | 2   |  |
| 9         | 20-CT6           | J   |  |
| 8         | CABINET BACK     | J   |  |
| 7         | DOVER KNDS       | J   |  |
| 6         | DECORATION 111   | J   |  |
| 5         | TV PWB WASHBOARD | J   |  |
| 4         | FUNCTIONAL ENDS  | J   |  |
| 3         | DECORATION 13    | J   |  |
| 2         | DECORATION 1     | J   |  |
| 1         | CABINET FRONT    | J   |  |
| PARTS NO. | PARTS NAME       | QTY |  |

|                  |      |           |       |
|------------------|------|-----------|-------|
| K2708UY ASSEMBLY |      | Drawing   |       |
| Version No.      | Date | Design    |       |
| Part No.         |      | Check     |       |
| Blank No.        |      | Approval  |       |
| Model No.        |      | Unit: mm  | Scale |
| Material         |      | Sheet No. | P1/1  |
| Director         |      | Quantity  |       |
| Drawing Layer    |      |           |       |
| View             |      |           |       |

## CFT2716 Spare Part List

| Item                                                                | Component | Description/Country Origin                              | Unit | Qty |
|---------------------------------------------------------------------|-----------|---------------------------------------------------------|------|-----|
| 1. CRT, CRT Socket, D.G coil, DG thermistor, Relay                  |           |                                                         |      |     |
| 1                                                                   | 31002362  | CRT-A68QCU770X590MGF-01-LG/U                            | PCS  | 1   |
| 2                                                                   | 25000962  | CRT SOCKET GZS10-2-AC3-14~17KV/A/M                      | PCS  | 1   |
| 3                                                                   | 12000414  | DEGAUSSING COIL KK74B-75T7D0.50-3050/U                  | PCS  | 1   |
| 4                                                                   | 13005053  | DEGAUSSING THERMISTOR T705-B60-A110-4R5M 230V-EPCOS/#   | PCS  | 1   |
| 5                                                                   | 34002023  | RELAY G5PA-1-OMRON                                      | PCS  | 1   |
| 2. All ICs ( excluding the voltage regulator )                      |           |                                                         |      |     |
| 1                                                                   | 19000493  | *IC TDA2616-PHILIPS/#                                   | PCS  | 1   |
| 2                                                                   | 19000695  | * HS817B (G) -VISHAY/#                                  | PCS  | 1   |
| 3                                                                   | 19001329  | IC TDA16846-SIEMENS/#                                   | PCS  | 1   |
| 4                                                                   | 19001639  | IC TDA9859-PHILIPS/#                                    | PCS  | 1   |
| 5                                                                   | 19002089  | IC TDA9183-PHILLPS/#                                    | PCS  | 1   |
| 6                                                                   | 19002389  | IC TDA9850-PHILIPS/#                                    | PCS  | 1   |
| 7                                                                   | 19002479  | IC 24LC08B-MICROCHIP/#                                  | PCS  | 1   |
| 8                                                                   | 19002820  | IC TDA8177F-ST/#                                        | PCS  | 1   |
| 9                                                                   | 19003030  | *IC HEF4052BP-PHILIPS/#                                 | PCS  | 2   |
| 10                                                                  | 19003949  | IC CKP1408S PHILIPS/# (TDA9378PS) KK8/KK12              | PCS  | 1   |
| 3. All TRs ( excluding the general switching TR )                   |           |                                                         |      |     |
| 1                                                                   | 17000056  | *TRANSISTOR 2SA1015-Y/V                                 | PCS  | 8   |
| 2                                                                   | 17000060  | *TRANSISTOR 2SC1815-Y/V                                 | PCS  | 9   |
| 3                                                                   | 17000066  | *TRANSISTOR 2SC2482/V                                   | PCS  | 1   |
| 4                                                                   | 17000067  | *TRANSISTOR 3DA4544                                     | PCS  | 3   |
| 5                                                                   | 17000121  | TRANSISTOR 2SA1013-O-TOSHIBA/#V                         | PCS  | 1   |
| 6                                                                   | 17000184  | TRANSISTOR 2SB985-S-SANYO/#/                            | PCS  | 1   |
| 7                                                                   | 17000621  | *TRANSISTOR D400-F/V                                    | PCS  | 1   |
| 8                                                                   | 17000651  | TRANSISTOR BF423-PHILIPS/#V                             | PCS  | 3   |
| 9                                                                   | 17000662  | TRANSISTOR BF422-PHILIPS/#V                             | PCS  | 3   |
| 10                                                                  | 17001141  | *TRANSISTOR 3DD2901                                     | PCS  | 1   |
| 11                                                                  | 17001201  | TRANSISTOR BC547B-PHILIPS/#                             | PCS  | 3   |
| 12                                                                  | 17001211  | *TRANSISTOR 3DG2655/V                                   | PCS  | 1   |
| 13                                                                  | 17001231  | F. E. T. SSH10N60B-FAIRCHILD/#                          | PCS  | 1   |
| 14                                                                  | 17001341  | FET IRF630B-FAIRCHILD/#                                 | PCS  | 1   |
| 4. Diodes ( excluding the general purpose Diode such as 1N4148etc ) |           |                                                         |      |     |
| 1                                                                   | 16000172  | *FAST RECOVERY DIODE RU4A-3A600V400ns                   | PCS  | 3   |
| 2                                                                   | 16000180  | *FAST RECOVERY DIODE BY299-2A800V500ns                  | PCS  | 1   |
| 3                                                                   | 16000181  | *SILICON BRIDGE RECTIFIER D3SB60-4A600V                 | PCS  | 1   |
| 4                                                                   | 16000189  | RECTIFIER DIODE IN4002-1A100V/H                         | PCS  | 1   |
| 5                                                                   | 16000194  | *FAST RECOVERY DIODE S5295G-0.5A400V0.2 $\mu$ s         | PCS  | 6   |
| 6                                                                   | 16000532  | *ZENER DIODE INTEGRATED POTENTIOSTAT $\mu$ PC574J-NEC/# | PCS  | 1   |



## Spare Part List

|                                                       |          |                                                    |     |    |
|-------------------------------------------------------|----------|----------------------------------------------------|-----|----|
| 7                                                     | 16001041 | *FAST RECOVERY DIODE TRGP10M-1A1000V250ns          | PCS | 2  |
| 8                                                     | 16001320 | *FAST RECOVERY DIODETRU3YX-2A-200V0.1 $\mu$ s      | PCS | 1  |
| 9                                                     | 16001381 | *FAST RECOVERY DIODE BYT56M-3A1000V100ns-VISHAY/#  | PCS | 1  |
| 10                                                    | 16001463 | *DAMPER DIODE TE25-15-5.0A-1500V-TIANSAN           | PCS | 1  |
| 11                                                    | 16001673 | * DIODE BZX79-B/C3V9-PHILIPS/#H                    | PCS | 1  |
| 12                                                    | 16001675 | * DIODE BZX79-B/C5V6-PHILIPS/#H                    | PCS | 1  |
| 13                                                    | 16001676 | * DIODE BZX79-B/C6V2-PHILIPS/#H                    | PCS | 1  |
| 14                                                    | 16001680 | * DIODE BZX79-B/C9V1-PHILIPS/#H                    | PCS | 1  |
| 5. Transformer ( Switching, Flyback, Line Drive etc ) |          |                                                    |     |    |
| 1                                                     | 11001453 | SWITCHING TRANSF. BCK50-066/A.U                    | PCS | 1  |
| 2                                                     | 30001392 | FLYBACK TRANSFORMER BSC28-070/A                    | PCS | 1  |
| 3                                                     | 11000244 | LINE DRIVE TRANSF. BCT19F-04                       | PCS | 1  |
| 6. Power Cord, Fuse                                   |          |                                                    |     |    |
| 1                                                     | 27000130 | POWER SUPPLY CORD SP-120P-D10A125V2.3MK220/U、C     | PCS | 1  |
| 2                                                     | 27000148 | FUSE RT1-20-4A-L125V/# K                           | PCS | 1  |
| 7. Remote Controller , IR Receiver                    |          |                                                    |     |    |
| 1                                                     | KK-Y261N | REMOTE HANDSET KK-Y261N FOR AKAI                   | SET | 1  |
| 2                                                     | 21000311 | IR REMOTE CONTROL RECEIVER                         | PCS | 1  |
| 8. Tuner / Saw Filter                                 |          |                                                    |     |    |
| 1                                                     | 32000959 | TUNER TDQ-BFSNS2/2                                 | PCS | 1  |
| 2                                                     | 20000762 | *SAW FILTER M1967-NIANYAN                          | PCS | 1  |
| 9. Speaker                                            |          |                                                    |     |    |
| 1                                                     | 29000086 | SPEAKER YDP58 $\times$ 126F-4 8 $\Omega$ 7W        | PCS | 2  |
| 10. Mechanical part ( Front Mask, Back cover etc )    |          |                                                    |     |    |
| 1                                                     | 36022782 | FRONT CABINET 200*KP290810/101C-121                | PCS | 1  |
| 2                                                     | 36022784 | FUNCTION PRESS BUTTON 291*KP290810/101D            | PCS | 2  |
| 3                                                     | 36022785 | POWER BUTTON 292*KP290810/101D                     | PCS | 1  |
| 4                                                     | 36022786 | 263*KP290820/101J                                  | PCS | 1  |
| 5                                                     | 36022875 | 263*KP210820/101J                                  | PCS | 1  |
| 6                                                     | 36024095 | BACK CABINET202*KP290811/101C-116!                 | PCS | 1  |
| 11. Packing material ( PAD, Box )                     |          |                                                    |     |    |
| 1                                                     | 36002116 | RUBBER PAD 334*371601-02                           | PCS | 4  |
| 2                                                     | 36003747 | *FELT PAPER 531*150010-05                          | PCS | 10 |
| 3                                                     | 36018536 | *DAMING PAD 333*P2998K20/00                        | PCS | 4  |
| 4                                                     | 36019326 | PAD 250*T2576S10/100G-G                            | PCS | 5  |
| 5                                                     | 39004416 | POLYBAG 310*071104-11R FOR ENVIRONMENT PROTECTION  | PCS | 2  |
| 6                                                     | 39006508 | POLYBAG 310*127123/044R FOR ENVIRONMENT PROTECTION | PCS | 1  |
| 7                                                     | 39007533 | *CARDBOARD 512*T2966C10/00                         | PCS | 1  |
| 8                                                     | 39012320 | POLYFOAM (UP) 300*KP290810/00                      | PCS | 1  |
| 9                                                     | 39012321 | POLYFOAM (DOWN) 300*KP290820/00                    | PCS | 1  |

## Spare Part List

|                        |                  |                                                            |     |   |
|------------------------|------------------|------------------------------------------------------------|-----|---|
| 10                     | 39015656         | CARTON BOX 510*CFT271610/01-AKAI                           | PCS | 1 |
| 12. Instruction Manual |                  |                                                            |     |   |
| 1                      | 39015657         | MANUAL 570*CFT2716/01-AKAI                                 | PCS | 1 |
| 13. Other key parts    |                  |                                                            |     |   |
| 1                      | KP2708UYSKD-00   | KP2708UY SKD CHASSIS ASSEMBLY                              | SET | 1 |
| 2                      | KP2708UYCRT-00   | KP2708UY CRT BOARD ASS'Y                                   | SET | 1 |
| 3                      | KP2708UYSYCLB-00 | KP2708UY SOUND PROCESS BOARD ASS'Y                         | SET | 1 |
| 4                      | KP2708UYAJB-00   | KP2708UY KEY RECEIVING BOARD ASS'Y                         | SET | 1 |
| 5                      | KP2708UYCDAVB-00 | KP2708UY ASIDE AV BOARD ASS'Y                              | SET | 1 |
| 6                      | 11001452         | POWER FILTER LCL-246                                       | PCS | 2 |
| 7                      | 13002004         | *COATING QUICK-FUSED RESIS. RF10D-1W0. 33 $\Omega$ K/A     | PCS | 1 |
| 8                      | 13002636         | GLASSGLAZE TRIMMER POTENTIOMETER WI06-2B-A202L             | PCS | 1 |
| 9                      | 13003642         | FUSED RESIS. RF1S-1W0. 33 $\Omega$ J-K0A/#U                | PCS | 1 |
| 10                     | 13003714         | *NTC 5D2-14-5 $\Omega$ -K-270V-ISHIZUK/#                   | PCS | 1 |
| 11                     | 13003792         | *COATING QUICK-FUSED RESIS. RF10B-1W0. 33 $\Omega$ K/L15-A | PCS | 2 |
| 12                     | 13003891         | *COATING QUICK-FUSED RESIS. RF10D-2W2. 7 $\Omega$ J/L25-A  | PCS | 1 |
| 13                     | 13004803         | *NTC-S237/5. 0-5 $\Omega$ M265V-SIEMENS/#                  | PCS | 1 |
| 14                     | 13005314         | *HIGH VOLTAGE GLASSGLAZE RESIS.                            | PCS | 2 |
| 15                     | 14000480         | *METALIZED POLY. CAP. CL21-250V104K/10                     | PCS | 1 |
| 16                     | 14000710         | *POLYPROPYLENE CAP. CBB12-400V223J/10                      | PCS | 1 |
| 17                     | 14000761         | *TERRACE META. POLY. CAP. CL23B-100V224K/5                 | PCS | 1 |
| 18                     | 14000778         | *METALIZED POLYPROPYLENE CAP. CBB81-1600V272J/15           | PCS | 1 |
| 19                     | 14000833         | *METALIZED POLY. CAP. CL21-630V333K/10                     | PCS | 1 |
| 20                     | 14000854         | *POLYPROPYLENE CAP. CBB12-200V364J/20                      | PCS | 1 |
| 21                     | 14000950         | *TERRACE META. POLY. CAP. CL23B-63V-474K/5                 | PCS | 1 |
| 22                     | 14000954         | *TERRACE META. POLY. CAP. CL23B-100V474K/5                 | PCS | 2 |
| 23                     | 14001014         | *METALIZED POLYPROPYLENE CAP. CBB81-1600V682J/20           | PCS | 1 |
| 24                     | 14001028         | *METALIZED POLYPROPYLENE CAP. CBB81-1600V752J/20           | PCS | 1 |
| 25                     | 14001256         | *TV CERAMIC CAP. CT1-500V-2B4-103M/b7. 5                   | PCS | 1 |
| 26                     | 14001758         | *AC CERAMIC CAP. CT81-250VAC-2E4-222MYA/b12. 5A            | PCS | 1 |
| 27                     | 14001776         | *TV CERAMIC CAP. CT81-2KV-Bn222J/b10                       | PCS | 1 |
| 28                     | 14002241         | *HIGH FREQUENCE ELEC. CAP. CD288-160V227T/1940             | PCS | 1 |
| 29                     | 14002355         | *HIGH FREQUENCE ELEC. CAP. CD288-160V336T/1225             | PCS | 1 |
| 30                     | 14002403         | *TV CERAMIC CAP. CT81-2KV-Bn821J/b7. 5                     | PCS | 1 |
| 31                     | 14002474         | *LARGE CAN NON-POLARIZED CAP. CDS-50V475M/1630             | PCS | 1 |
| 32                     | 14002488         | *TV CERAMIC CAP. CT81-1KV-2B4-471K/b7. 5                   | PCS | 1 |
| 33                     | 14002494         | *TV CERAMIC CAP. CT81-2KV-Bn471K/b7. 5                     | PCS | 1 |
| 34                     | 14003359         | ANTI-INTERFERENCE FILM. CAP. MKT61-275VAC104M/15U          | PCS | 2 |
| 35                     | 14003535         | *HIGH FREQUENCE ELEC. CAP. CD288-250V475T/1220             | PCS | 1 |
| 36                     | 14003913         | * CERAMIC CAPCT1-500V-2E4-472Z- $\Phi$ 9. 6/b7.            | PCS | 2 |
| 37                     | 14003975         | *LARGE CAN TYPE ALUMINUM ELEC. CAP.                        | PCS | 1 |

# Spare Part List

|    |          |                                                  |     |    |
|----|----------|--------------------------------------------------|-----|----|
| 38 | 14004022 | *AC CERAMIC CAP. CT81-250VAC-2B4-471-K-YA/b10A   | PCS | 2  |
| 39 | 14005304 | *METALIZED POLYPROPYLENE CAP. CBB21B-250V364J/20 | PCS | 1  |
| 40 | 14005596 | *HIGH FREQUENCE ELEC. CAP. CD288-63V477M/1       | PCS | 1  |
| 41 | 14005598 | *HIGH FREQUENCE ELEC. CAP. CD288-25V477M/1       | PCS | 1  |
| 42 | 14005599 | *HIGH FREQUENCE ELEC. CAP. CD288-16V108M/        | PCS | 1  |
| 43 | 15000086 | *INDUCTANCE COIL L161-001-160 $\mu$ HK/L7.5      | PCS | 1  |
| 44 | 15000099 | HORI. LINEARITY COIL HXC-19A/L7.5                | PCS | 1  |
| 45 | 15000209 | *INDUCTANCE COIL L791-001-790 $\mu$ HK/L7.5      | PCS | 1  |
| 46 | 15000213 | *INDU. WITH COLOR CODES LGB0606-R82K/            | PCS | 1  |
| 47 | 16000165 | *SWITCHING DIODE IN4148-0.1A75V4ns/H             | PCS | 27 |
| 48 | 16000723 | *LED BT-H202YXN-31-R LUCID $\Phi$ 3              | PCS | 1  |
| 49 | 19002610 | IC MC7805CT-ONSEMI/#                             | PCS | 1  |
| 50 | 19002619 | IC MC7808CT-ONSEMI/#                             | PCS | 1  |
| 51 | 20000002 | *CERAMIC TRAP FILTER XT4.5MB                     | PCS | 1  |
| 52 | 20000274 | CERAMIC RESONATOR CSB503F58 MURATA /#            | PCS | 1  |
| 53 | 22000340 | *QUARTZ CRYSTAL JA120-12M-30-20PF-20 $\Omega$    | PCS | 1  |
| 54 | 23000226 | TOUCH SWITCH KFC-A06-L4-4.5 $\times$ 6.5-4.3B    | PCS | 6  |
| 55 | 23000481 | TOUCH SWITCH KFC-A07-10H070                      | PCS | 1  |
| 56 | 25000150 | S TERMINAL JACK TCS-56-WK                        | PCS | 1  |
| 57 | 25000187 | THREE HOLE AV SOCKET WK3-8.4-13                  | PCS | 1  |
| 58 | 25000924 | SIX HOLE AV SOCKET AV6-8.4-1                     | PCS | 1  |
| 59 | 25001622 | SOCKET ZAV-534V-01                               | PCS | 1  |
| 60 | 36014984 | AC LINE CORE CLIP 254*000210/00-F                | PCS | 1  |
| 61 | 36015337 | BRACKET 229*ST296810/100C                        | PCS | 2  |
| 62 | 36018318 | SPEAKER BRACKET229*P3411T10/101                  | PCS | 2  |
| 63 | 36019002 | BRACKET 229*T292610/100C                         | PCS | 1  |
| 64 | 36027854 | MODEL PLATE 412*CFT271610/01-AKAI                | PCS | 1  |
| 65 | 36027895 | PLATE384*CFT271610/01-AKAI                       | PCS | 1  |
| 66 | 37008152 | NAME PLATE 401*CFT271610/01-AKAI                 | PCS | 1  |